

Serial No. 10/618,736

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a transmitting antenna and receiving antennas arranged on the top face of a grounding conductor plate, and

a radar transmitter/receiver apparatus for supplying a signal to the transmitting antenna and detecting the azimuth of an obstacle from signals of a wave reflected by the obstacle and received by the receiving antennas,

wherein a diffracted wave prevention structure is provided at edges of the top face of said grounding conductor plate at least in part, said diffracted wave prevention structure being arranged to prevent a diffracted wave being generated through radiation from the transmitting antenna, reflection by the obstacle and diffraction at the edges and then being received by the receiving antenna.

2. (Original) The automotive radar according to claim 1, wherein said diffracted wave prevention structure comprises a radio wave absorber covering said top face edges at least in part and arranged on the top face of said grounding conductor plate.

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3. (Original) The automotive radar according to claim 2, wherein a radio wave absorber is also arranged between said transmitting antenna and said receiving antennas.

4. (Original) The automotive radar according to claim 2, wherein said radio wave absorber is comprised of a sponge material containing radio wave absorbing grains.

5. (Original) The automotive radar according to claim 3, wherein said radio wave absorbers are comprised of a sponge material containing radio wave absorbing grains.

6. (Presently Presented) The automotive radar according to claim 2, further comprising a radome covering the front of said transmitting antenna and said receiving antennas, ~~wherein said radio wave absorber is fitted in advance to the radome.~~

7. (Presently Presented) The automotive radar according to claim 3, further comprising a radome covering the front of said transmitting antenna and said receiving antennas, ~~wherein said radio wave absorbers are fitted in advance to the radome.~~

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8. (Original) The automotive radar according to claim 2, wherein the height of said radio wave absorber from the top face of said transmitting antenna is so selected as to prevent radio waves from radiating outside the range of obstacle detecting angles, and its height from the top faces of said receiving antennas is so selected as to prevent radio waves from arriving from outside the range of obstacle detecting angles.

9. (Original) The automotive radar according to claim 3, wherein the height of said radio wave absorbers from the top face of said transmitting antenna is so selected as to prevent radio waves from radiating outside the range of obstacle detecting angles, and their height from the top faces of said receiving antennas is so selected as to prevent radio waves from arriving from outside the range of obstacle detecting angles.

10. (Previously Presented) The automotive radar according to claim 1, wherein the top face edges of said grounding conductor plate are at least in part made up of at least two faces.

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11. (Previously Presented) The automotive radar according to claim 1, wherein the top face edges of said grounding conductor plate at least in part have a curved face.

12. (Previously Presented) The automotive radar according to claim 1, wherein the top face edges of said grounding conductor plate are provided with projections.

13. (Original) An automotive radar comprising:
a transmitting antenna and receiving antennas arranged on the top face of a grounding conductor plate, and
a radar transmitter/receiver apparatus for supplying transmit signals to the transmitting antenna and detecting the azimuth of an obstacle from signals of a wave reflected by the obstacle and received by the receiving antennas, wherein:
the top face of said grounding conductor plate on which said transmitting antenna is positioned is higher than the top face of said grounding conductor plate on which said receiving antennas are arranged.

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14. (New) The automotive radar according to claim 6, wherein said radio wave absorber is fitted in advance to the radome.

15. (New) The automotive radar according to claim 7, wherein said radio wave absorbers are fitted in advance to the radome.